

THIS OPINION WAS NOT WRITTEN FOR PUBLICATION

The opinion in support of the decision being entered today
(1) was not written for publication in a law journal and
(2) is not binding precedent of the Board.

Paper No. 18

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte KATSUYA MASAO

Appeal No. 95-3781
Application 07/978,223¹

ON BRIEF

Before BARRETT, LEE and CRAWFORD, Administrative Patent Judges.

CRAWFORD, Administrative Patent Judge.

DECISION ON APPEAL

This is a decision on an appeal from the examiner's
final rejection of claims 1, 6 and 9-17. Claims 18 and 19

¹ Application for patent filed November 19, 1992.

were found allowable prior to the final rejection. The examiner indicates in the examiner's answer that claims 2-5, 7 and 8 are objected to as being dependent from a rejected claim but appear to contain allowable subject matter. Therefore, we will consider the rejections of claims 1, 6 and 9-17 in this appeal.

THE REFERENCES

The following references were relied on by the examiner:

Korth 1985	4,516,855	May 14,
Cohn et al. (Cohn) 1991	5,076,696	Dec. 31,

THE REJECTIONS

Claims 6 and 9 stand rejected under 35 U.S.C. § 112, second paragraph as being indefinite. Claims 1 stands rejected under 35 U.S.C. § 103 as being unpatentable over Korth.² Claims 10-17 stand rejected under 35 U.S.C. § 103 as being unpatentable over Korth in view of Cohn.

Rather than reiterate the entire arguments of the appellant and the examiner in support of their respective

² The examiner indicates in the answer that claim 9 contains allowable subject matter if the rejection under 35 U.S.C. § 112 is overcome.

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positions, reference is made to appellant's brief (Paper No. 13) and the examiner's answer (Paper No. 15) for the full exposition thereof.

OPINION

In reaching our conclusions on the issues raised in this appeal, we have carefully considered appellant's specification and claims, the applied references and the respective viewpoints advanced by the appellant and the examiner. These considerations lead us to make the determinations which follow.

With regard to the examiner's rejection of claims 6 and 9 under 35 U.S.C. § 112, second paragraph, we initially note that the purpose of the requirement stated in the second paragraph of 35 U.S.C. § 112 is to provide those who would endeavor, in future enterprise, to approach the area as circumscribed by the claims of a patent, with the adequate notice demanded by due process of law, so that they may more readily and adequately determine the boundaries of protection involved and evaluate the possibility of infringement and dominance. In re Hammack, 427 F.2d 1378, 1382, 166 USPQ 204,

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208 (CCPA 1970). The inquiry as stated in In re Moore, 439

F.2d 1232, 1235, 169 USPQ 236, 238 (CCPA 1971) is:

... whether the claims do, in fact,
set out and circumscribe a particular
area with a reasonable degree of
precision and particu-larity ...
[t]he definiteness of the language
employed must be analyzed--not in a
vacuum, but always in light of the
teachings of the prior art and of the
particular application disclosure as
it would be interpreted by one
possessing the ordinary level of skill
in the pertinent art.

In the instant case, the examiner is of the opinion
that it is unclear how (1) a polarizer can be "fixedly
arranged to provide three different azimuthal angles of
polarized light" as recited in claim 6, and (2) an analyzer
can be "fixed at three different azimuthal angles" as recited
in claim 9. The examiner reasons that a polarizer or analyzer
cannot be fixed and still provide three different angles of
polarized light. However, in our view, the language of claims
6 and 9 broadly indicates that the polarizer or analyzer is
fixed, by a certain arrangement, so that three azimuthal
angles are provided. This conclusion is supported by the film
on the specification which states at page 4 that the thickness

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of sample II can be determined by "orientating the polarizer 3 or the analyzer 6 to provide three or more azimuthal angles." Although the language in these claims is broad in that the details of the arrangement are not recited, as pointed out by the examiner, the claims are not indefinite. See In re Gardner, 427 F.2d 786, 788, 166 USPQ 138, 140 (CCPA 1970) (breadth is not indefiniteness).

If the examiner is of the position that one with ordinary skill in the art would not know how to orient a polarizer or analyzer to provide three different azimuthal angles of polarized light, that view has not been expressed and it would concern enablement 35 U.S.C. § 112, first paragraph, not indefiniteness. We do not express any opinion in that regard since lack of an enabling disclosure has not been raised as an issue by the examiner and is not the basis of the rejection on appeal.

In view of the foregoing, we will not sustain the rejection of claims 6 and 9 under 35 U.S.C. § 112.

Turning next to the rejection of claim 1 as unpatentable under 35 U.S.C. § 103 over Korth, we find that Korth discloses an ellipsometer for measuring the

characteristics of a sample (Fig. 1, Col. 1, lines 38-41, Col. 3, line 17). The ellipsometer includes a polarizer 3 for converting a light beam into a polarized light beam (Fig. 1, Col. 3, lines 20-24) and a beam expander 2 for expanding the polarized light (Col. 3, line 18). The light beam which has been polarized by polarizer 3 and expanded by beam expander 2 is reflected from a sample 5 (Fig. 1). Optics 8 condenses the light beam reflected from the sample so as to have a cross section smaller than the size of analyzers 12a, 12b and 12c (Fig. 1). We note that analyzers in an ellipsometer are typically linear polarizers.³

Korth also disclosed that analyzers 12a, 12b and 12c whose transmission direction differs by 60E, direct the light beam to image converters 11a, 11b and 11c (Col. 3, lines 29-30). Korth does not disclose that the polarizer is ahead of the beam expander on the optical path as recited in claim 1. As such Korth discloses the invention as recited in claim 1 except that in Korth the beam is expanded before it is polarized. The examiner stated:

³ 6 McGraw Hill Encyclopedia of Science and Technology 356 (7th ed 1997).

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It would have been obvious to those of ordinary skill at the time the invention was made to place the polarizer before rather than after the beam expander because this is a simple variation of the system of Korth which would obviously maintain the significant features of the device, namely the creation of an expanded polarized light beam to be directed onto the sample. That those of ordinary skill [k]new that polarized beams could be expanded is illustrated in figure 5 of Korth, in which a polarized beam, polarized by polarized 51, is expanded by lens systems (500, 503) to create expanded polarized light beam with diameters larger than the size of the polarizer. [Examiner's Answer at page 5]

We agree with the reasoning of the examiner and thus we will sustain the examiner's rejection of claim 1 as unpatentable under 35 U.S.C. § 103 over Korth.

This decision is based solely on the arguments raised by the appellants. We offer no opinion on arguments which could have been raised but which were not set forth in the appeal brief.

The appellant's argument regarding this rejection is directed to Figure 5A of Korth. Appellant argues that Figure 5A is directed to a holographic interferometer and that

therefore the technical background and field of invention are different from the appellant's invention. This argument is not persuasive because the rejection is primarily based on Figure 1 of Korth which is clearly an ellipsometer (Col. 2, line 61). The examiner referred to Figure 5A of Korth to show an alternative way for providing expanded polarized light. In that regard, Figure 5A of Korth shows that a polarizer could precede a beam expander. Figure 5A is a part of the disclosure of Korth and is reasonably pertinent to the generation of an expanded polarized light beam as claimed. The examiner had ample basis to look to Figure 5A for its pertinent teachings.

Turning next to the rejection of claims 10-17 as unpatentable under 35 U.S.C. § 103 over Korth in view of Cohn, we find that Cohn discloses an microellipsometer in which a monochromatic light beam from a laser source 10 travels successively through a coherence scrambler 12, a collimator 14, a polarizer 16 and a compensator 18 (Figure 1, Col. 6, line 47). The light beam travels from the compensator 18 and impinges on and is reflected by a sample 20 (Figure 1). The reflected light beam passes through iris 22 and imaging lens

24 and is polarized by polarizer or analyzer 26. In Figure 1, analyzer 26 rotates on a rotation stage. In another embodiment depicted in Figure 2, the polarizer 50 rotates on a rotation stage. The polarizer and analyzer are preferably birefringent polarizing prisms. Cohn also discloses that three equations representing three analyzer angles are necessary to determine the properties of the reflecting surface (Col 1, lines 15-29, Col. 4, lines 29-34). The examiner stated:

It would have been obvious rotate the polarizer or analyzer of Korth... to generate the three different signals at the three different angles as taught by Korth. Cohn et al teaches measuring at a minimum of three angles (column 4, lines 33-34), which agrees with Korth, which measures at three angles. [Examiner's Answer at page 8].

With respect to the recitation in claim 11 that the photo sensor is an area sensor, the examiner points out that Cohn teaches that after the reflected light beam passes through the polarizer 26, it is directed to a CCD camera 30 which senses an area of reflected light (See Col. 7, lines 11-15).

In regard to the recitation in claim 12 that the photosensor is a line photo sensor, the examiner stated:

It would have been obvious to use other known detector arrangements, such as a line sensor because these are known sensors which operate in a recognized analogous manner.
[Examiner's Answer at page 8].

In regard to the recitation in claims 13-17 that the polarizer or analyzer is alternately rotated to fixed positions or rotated continuously, the examiner is of the opinion that:

"It would have been obvious to either fix the polarizer to each desired position and make a measurement or to rotate the polarizer continuously and "grab" the measurement as the polarizer passes the desired position. Cohn et al appears to at least suggest both these techniques in column 7, lines 7-9, Cohn et al mentions "[p]rior to each measurement, the analyzer 26 can be positioned", which at least suggests moving the polarizer or analyzer to a position and holding it there until the measurement is finished. The discussion in Cohn et al, column 8, line 55 appears to disclose, or at least suggest, continuously rotating the polarization (by means of a rotating half-wave plate); as the reference does teach rotating the polarizer, the suggestion of continuous rotation of the

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polarization suggests the continuous rotation of the polarizer."

The appellant argues that the combination recited in claims 10-17 distinguishes over the combined teachings of the Korth and Cohn. However, appellant has not specifically contested any of the findings or the reasoning of the examiner with respect to the rejection of these claims. We are of the opinion that the findings and reasoning of the examiner in regard to the rejection of these claims is reasonable and in the absence of any argument by the appellant controverting the findings and reasoning of the examiner, we will sustain the rejection of claims 10-17 as unpatentable under 35 U.S.C. § 103.

In summary, the examiner's rejection of claims 6 and 9 under 35 U.S.C. § 112, second paragraph is reversed. The examiner's rejections of claims 1 and 10-17 under 35 U.S.C. § 103 is affirmed.

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No time period for taking any subsequent action in
connection with this appeal may be extended under 37 CFR
1.136(a).

AFFIRMED-IN-PART

LEE E. BARRETT)	
Administrative Patent Judge)	
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JAMESON LEE)	BOARD OF PATENT
Administrative Patent Judge)	APPEALS AND
)	INTERFERENCES
)	
MURRIEL E. CRAWFORD)	
Administrative Patent Judge)	

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Armstrong & Kubovcik
1725 K Street N.W., Suite 1000
Washington, DC 20006

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